

REMARKS

Claims 1-13 have been examined. Claim 5 has been rejected under 35 U.S.C. § 112, first paragraph, and claims 1-9, 11, and 13-15 have been rejected under 35 U.S.C. § 102(b). Also, the Examiner has indicated that claims 10 and 12 contain allowable subject matter.

I. Objection to the Specification

The Examiner has objected to the specification for allegedly failing to provide proper antecedent basis for the claimed “holder” recited in claim 12. Applicants submit that the specification provides adequate support and antecedent basis for all of the claimed terms. Nonetheless, in order to expedite prosecution, Applicants have amended the specification so that it explicitly recites a non-limiting example of a “holder”.

II. Rejection under 35 U.S.C. § 112, first paragraph

Claim 5 has been rejected under 35 U.S.C. § 112, first paragraph, for not being enabled by the specification. Applicants submit that the specification does in fact provide an illustrative, non-limiting example of the claimed feature that enables one skilled in the art to practice an embodiment of the claimed features. For example, as described in the specification on page 9, lines 3-6, the positions of the induction paths are in a middle portion of the area where the two ink supply paths 32 face each other. Such description in the specification, read in conjunction with Figures 6 and 7(a)-7(c) clearly enable one skilled in the art to create an embodiment of the claimed induction paths at the claimed positions.

Since the Examiner seems to be confused by the actual scope of the claim language recited in claim 5, Applicants submit that the Examiner may have intended to reject the claim under 35 U.S.C. § 112, second paragraph, for being indefinite. While Applicants feel that the claim language is definite, Applicants have amended the claim to clarify it. However, such amendments do not narrow the scope of the claims.

III. Rejections under 35 U.S.C. § 102 (b) over U.S.P. 4,368,478 to Koto (“Koto”)

Claims 1-9, 11, and 13-15 have been rejected under 35 U.S.C. § 102 (b) as being anticipated by Koto.

A. Claim 1

Applicants submit that claim 1 is patentable. For example, claim 1 states that the enlarged portion of the second ink supply path 17 or 30 is tapered such that the cross-sectional area of the enlarged portion gradually changes along the ink transfer direction from the second ink supply path to the first ink supply path. Having an enlarged portion with the tapered shape improves the capillary attraction of the induction paths and improves the flow of ink through the enlarged portion.

Since Koto does not suggest such feature, Applicants submit that claim 1 is patentable.

B. Claims 2-8

Since claims 2-8 depend upon claim 1, Applicants submit that they are patentable at least by virtue of their dependency.

C. Claim 9

Applicants submit that claim 9 is patentable over Koto. For example, claim 9 states that the induction paths are formed by mounting a groove formation member in the enlarged portion. The Examiner maintains that fibers 94 shown in Figure 9C correspond to the claimed groove formation member, but Applicants submit that the Examiner is misapplying the teachings of the reference. For example, the fibers 94 do not correspond to “grooves”. For example, as defined in Webster’s New World Dictionary (second college edition), a groove is defined as “a long, narrow furrow or hollow cut in a surface. . . .” Since the fibers 94 do not correspond to a groove, they cannot correspond to the claimed groove formation member. Accordingly, Applicants submit that claim 9 is patentable over Koto.

D. Claims 13 and 14

Since claims 13 and 14 depend upon claim 1, Applicants submit that they are patentable at least by virtue of their dependency.

E. Claim 15

Since claim 15 contains features that are similar to the features recited in claim 1, Applicants submit that claim 15 is patentable for at least the reasons presented above.

IV. Allowable Subject Matter

Claims 10 and 12 have been objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. Applicants have amended such claims in independent form to overcome the objection.

V. Newly added claims

Applicants have added new claims 16-27 to more fully protect the present invention.

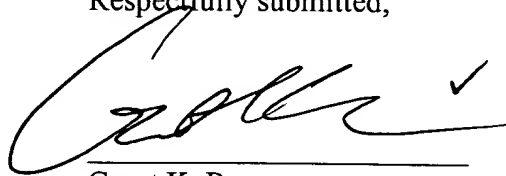
VI. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Amendment Under 37 C.F.R. § 1.111
U.S. Appln. No. 09/242,490

Applicants hereby petition for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Grant K. Rowan', with a checkmark at the end of the signature.

Grant K. Rowan
Registration No. 41,278

SUGHRUE, MION, ZINN,
MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, D.C. 20037-3213
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

Date: October 1, 2001

APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

The specification is changed as follows:

Please amend page 11, third full paragraph, as follows:

Specifically, in the example in Fig. 11(a), the induction member 49 is integrally formed with the ink supply needle 48, and in the example in Fig. 11(b), a rod-shaped induction member 53 is formed along the center line of a member or holder 52 that can be mounted in a filter chamber 50 and that has ink flow windows 51. The lengths of the induction members 49 and 53 are so adjusted that their lower ends substantially contact the filter 35 in order to spread the ink out across the surface of the filter 35.

IN THE CLAIMS:

The claims are amended as follows:

1. (Twice amended) An ink-jet recording apparatus comprising:
a recording head for receiving ink supplied via a first ink supply path and for ejecting ink droplets;
a second ink supply path along which ink is transmitted from an ink supply to said first ink supply path,
wherein said ink is transmitted in said second ink supply path generally in an ink transfer direction from said ink supply to said first ink supply path,
wherein said second ink supply path comprises a connection portion that receives

said ink from said ink supply and comprises an enlarged portion, and
wherein a cross-sectional area of said enlarged portion, which is substantially perpendicular to said ink transfer direction, is greater than a cross-sectional area of said connection portion, which is substantially perpendicular to said ink transfer direction; and
a filter which is located at a joint area that forms a communication portion situated between said first ink supply path and said second ink supply path, wherein said enlarged portion comprises at least a portion of said joint area,
wherein ink induction paths are formed in said enlarged portion in order to use capillary attraction to induce the flow of ink through said filter, and
wherein said enlarged portion is tapered such that said cross-sectional area of said enlarged portion gradually changes along said ink transfer direction from said second ink supply path to said first ink supply path.

5. (Twice amended) An ink-jet recording apparatus according to claim 1, wherein said ink induction paths are formed at positions that are farthest from said first ink supply path in said cross-sectional area of said enlarged portion.

10. (Twice amended) An ink-jet recording apparatus [according to claim 4,]
comprising:
a recording head for receiving ink supplied via a first ink supply path and for ejecting ink droplets;
a second ink supply path along which ink is transmitted from an ink supply to said first

ink supply path,

wherein said ink is transmitted in said second ink supply path generally in an ink transfer direction from said ink supply to said first ink supply path,

wherein said second ink supply path comprises a connection portion that receives said ink from said ink supply and comprises an enlarged portion, and

wherein a cross-sectional area of said enlarged portion, which is substantially perpendicular to said ink transfer direction, is greater than a cross-sectional area of said connection portion, which is substantially perpendicular to said ink transfer direction; and
a filter which is located at a joint area that forms a communication portion situated between said first ink supply path and said second ink supply path, wherein said enlarged portion comprises at least a portion of said joint area,

wherein ink induction paths are formed in said enlarged portion in order to use capillary attraction to induce the flow of ink through said filter,

wherein said ink induction paths are extended to an area that does not face said first ink supply path, and

wherein said ink induction paths are formed by mounting a rib formation member in said enlarged portion.

12. (Twice amended) An ink-jet recording apparatus [according to claim 4,]
comprising:

a recording head for receiving ink supplied via a first ink supply path and for ejecting ink droplets;

a second ink supply path along which ink is transmitted from an ink supply to said first ink supply path,

wherein said ink is transmitted in said second ink supply path generally in an ink transfer direction from said ink supply to said first ink supply path,

wherein said second ink supply path comprises a connection portion that receives said ink from said ink supply and comprises an enlarged portion, and

wherein a cross-sectional area of said enlarged portion, which is substantially perpendicular to said ink transfer direction, is greater than a cross-sectional area of said connection portion, which is substantially perpendicular to said ink transfer direction; and
a filter which is located at a joint area that forms a communication portion situated between said first ink supply path and said second ink supply path, wherein said enlarged portion comprises at least a portion of said joint area,

wherein ink induction paths are formed in said enlarged portion in order to use capillary attraction to induce the flow of ink through said filter,

wherein said ink induction paths are extended to an area that does not face said first ink supply path, and

wherein said ink induction paths are formed in a holder that is mounted in said enlarged portion, said holder including a rod-shaped member that is positioned coaxially with said second ink supply path.

15. (Once amended) An ink-jet recording apparatus comprising:

a recording head for receiving ink supplied via a first ink supply path and for ejecting ink droplets;

a second ink supply path along which ink is transmitted from an ink cartridge to said first ink supply path; and

a filter which is located at a joint area that forms a communication portion situated between said first ink supply path and said second ink supply path,

wherein ink induction paths are formed at said joint area adjacent to said second ink supply path in order to use capillary attraction to induce the flow of ink through said filter, and said ink induction paths are extended from an ink inlet of said second ink supply path, and

wherein said joint area is tapered such that a cross-sectional area of said joint area gradually changes along a direction from said second ink supply path to said first ink supply path.

Claims 16-27 are added as new claims.